What is claimed is:

1. An isolated and purified protein comprising a mammalian K^+ channel with two pore domains, wherein said channel produces currents whose current-voltage relationship is weakly inwardly rectifying in high symmetrical K^+ conditions.

2. The protein of claim 1, wherein said channel is a human K^+ channel.

3. The protein of claim 1, having a sequence of amino acids as set forth in SEQ ID No. 2.

4. A nucleic acid molecule comprising a nucleic acid sequence coding for a mammalian K^+ channel with two pore domains, wherein said channel produces currents whose current-voltage relationship is weakly inwardly rectifying in high symmetrical K^+ conditions.

5. The nucleic acid molecule of claim 4, wherein said molecule is a fragment of said mammalian K^+ channel.

6. The nucleic acid molecule of claim 4, wherein said K^+ channel is a human K^+ channel.

7. The nucleic acid molecule of claim 4 having an amino acid sequence as set forth in SEQ ID No. 2.

8. The nucleic acid molecule fragment of claim 5, wherein said fragment has an amino acid sequence as set forth in SEQ. ID. No. 2, or a part thereof.

9. The nucleic acid molecule of claim 6 having an amino acid sequence as set forth in SEQ ID No. 2.

10. The nucleic acid molecule of claim 4 comprising SEQ. ID. No. 1.

11. The nucleic acid molecule of claim 5 comprising a part of SEQ. ID. No. 1.

12. The nucleic acid molecule of claim 6 comprising SEQ. ID. No. 1.

13. An antibody directed against a mammalian K^+ channel of claim 1.

14. The antibody of claim 13, wherein said antibody is a polyclonal antibody.

15. The antibody of claim 13, wherein said antibody is a monoclonal antibody.

16. The antibody of claim 13, wherein said antibody is a derivative of the antibody directed against said mammalian K^+ channel.

17. The antibody of claim 13, wherein said antibody is a fragment of the antibody directed against said mammalian K^+ channel.

18. An integration and expression vector comprising at least one nucleic acid molecule of claim 4, wherein said nucleic acid molecule is operably associated with control sequences.

19. A cellular host transformed with the vector of claim 18, which cell expresses a mammalian K+ channel with two pore domains whose current-voltage relationship is weakly inward-rectifying in high symmetrical K^+ conditions.

20. The transformed cellular host of claim 19, wherein said cellular host is selected from a group consisting of mammalian cells, vertebrate cells and invertebrate cells.

21. The transformed cellular host of claim 19, which cells are COS cells.

22. A nucleic and oligonucleotide probe prepared from at least one nucleic acid molecule of claim 4 or a part thereof.

23. A method for identifying a biologically active compound having anesthetic properties comprising the steps of:

providing a biologically active compound;

contacting said compound with a cellular host expressing on its surface a mammalian K^+ channel with two pore domains whose current-voltage relationship is weakly inward-rectifying in high symmetrical K^+ conditions;

determining the K^+ transport activity of said mammalian K^+ channel; and

selecting the compound capable of activating K^+ transport as indicative of said compound having anesthetic properties.

24. The method of claim 23, wherein said mammalian K^+ channel is a human K+ channel.

25. The method of claim 23, wherein said mammalian K^+ + channel comprises SEQ. ID No. 2.

26. A pharmaceutical composition having anesthetic properties which contains a biologically active compound identified by the method of claim 23.

27. The mammalian K^+ channel of claim 1, wherein said high symmetrical K^+ conditions is a K^+-rich external medium of around 150mM.